## ERRATUM

# Erratum to: Preservation of blood glucose homeostasis in slow-senescing somatotrophism-deficient mice subjected to intermittent fasting begun at middle or old age

Oge Arum • Jamal K. Saleh • Ravneet K. Boparai • John J. Kopchick • Romesh K. Khardori • Andrzej Bartke

Published online: 9 August 2014 © American Aging Association 2014

# Erratum to: Age DOI 10.1007/s11357-014-9651-2

Tables detailing the results of statistical analyses, each of which accompany its corresponding figure panel in Figs. 2, 3, 4, 5, 6, and 7, were omitted from the original version. As those tables are integral to the comprehension and inference (as well as for potential independent interpretations) of those results, they have been appropriately inserted in this version.

The online version of the original article can be found at http://dx. doi.org/10.1007/s11357-014-9651-2.

O. Arum · J. K. Saleh · R. K. Boparai · A. Bartke Department of Internal Medicine, Southern Illinois University School of Medicine, Springfield, IL 62794, USA

J. J. Kopchick Edison Biotechnology Institute and Department of Biomedical Sciences, Heritage College of Osteopathic Medicine, Ohio University, Athens, OH 45701, USA

R. K. Khardori
Department of Internal Medicine, Division of Endocrinology and Metabolism, Eastern Virginia Medical School,
700 West Olney Road, Norfolk, VA 23507, USA

O. Arum (⊠) 631 N. 6th Street, 2B, Springfield, IL 62702, USA e-mail: oge.arum@gmail.com





Fig. 2 Short-term IF improved dynamics of blood glucose assimilation in middle-aged GHR-KO females and old Ames Dwarf males. **a** AL-fed glucose tolerance test (absolute values, with statistical analysis table) showing detrimental effect of KO phenotype and beneficial effects of short-term IF diet on both middle-aged N and middle-aged KO female mice. **b** Fasted glucose tolerance test (absolute values, with statistical analysis table) showing beneficial effects of short-term IF diet on both middle-aged N and middle-aged KO female mice. **c** AL-fed glucose tolerance N and middle-aged KO female mice. **c** AL-fed glucose

tolerance test (absolute values, with statistical analysis table) showing beneficial effect of IF diet on old N littermate control male mice. **d** Fasted glucose tolerance test (absolute values, with statistical analysis table) showing detrimental effect of Df phenotype, and beneficial effect of IF diet on old Df male mice. All measures of central tendency are arithmetic means, and all depictions of variation (*error bars*) represent standard deviations (*SD*) (see also Figs. S1–S8)





#### Fig. 2 (continued)





**Fig. 3** Short-term IF improved kinetics of insulin-mediated blood glucose clearance in middle-aged GHR-KO females and old Ames Dwarf males, and decreased gluconeogenesis in middle-aged GHR-KO females. **a** Insulin tolerance test (normalized values, with statistical analysis table) showing beneficial effect of KO phenotype and a combined sensitizing effect of both factors on middleaged N littermate control females. **b** Insulin tolerance test (normalized values, with statistical analysis table) showing sensitizing effect of Df phenotype, sensitizing effects of IF on both old N males and old Df mutant males, and a combined sensitizing

effect of both factors on old N males. **c** Pyruvate conversion test (normalized values, with statistical analysis table) showing promoting effect of KO phenotype and repressive effects of short-term IF diet on both middle-aged N and middle-aged KO females. **d** Pyruvate conversion test (normalized values, with statistical analysis table) showing promoting effect of Df phenotype. All measures of central tendency are arithmetic means, and all depictions of variation (*error bars*) represent standard deviations (*SD*) (see also Figs. S9–S16)





#### Fig. 3 (continued)



<i>p</i> -value
0.6736
0.0059
0.0086
0.0157





and agen and no raster blood and be	
Comparison	p-value
N on A.L. vs. KO on A.L.	0.4513
N on A.L. vs. N on I.F.	0.0498
N on A.L. vs. KO on I.F.	0.1637
KO on A.L. vs. KO on I.F.	0.0333



Fig. 4 Differential effects of phenotype or diet on AL-fed or fasted blood glucose concentrations at middle-aged (for GHR-KO Mice) or old (for Ames Dwarfs) age range. **a** AL-fed testing of middleaged GHR-KO female mice after short-term IF (with statistical analysis table) showing blood glucose-lowering effects of IF diet for both middle-aged N female littermate mice and middle-aged female KO mutants, and an *additive* (lowering) effect of KO phenotype and IF diet on middle-aged N female littermate controls. **b** Fasted assessment of middle-aged GHR-KO females after shortterm IF (with statistical analysis table) exhibiting blood glucose-*increasing* effects of IF diet for both middle-aged N female littermates and middleaged KO female mutants. **c** AL-fed testing of old Ames Dwarf male mice after short-term IF (with statistical analysis table) displaying blood glucose-lowering effect of IF diet on old N littermatemales. **d** Fasted assessment of old Ames Dwarf males after short-term IF (with statistical analysis table) demonstrating blood glucoselowering effect of Df phenotype as well as beneficial effect of IF diet on old N littermate males. All measures of central tendency are arithmetic means, and all depictions of variation (*error bars*) represent standard deviations (*SD*)





**Fig. 5** Differential effects of phenotype or diet on AL-fed or fasted blood glucose concentrations at old (for GHR-KO mice) or oldest-old (for Ames Dwarfs) age range. **a** AL-fed testing of old GHR-KO female mice after longer-term IF (with statistical analysis table) showing blood glucose-lowering effect of a combination of KO phenotype and IF diet for old KO littermate control females. **b** Fasted assessment of old GHR-KO females after longer-term IF (with statistical analysis table) exhibiting no blood-glucose lowering effect of either KO phenotype, IF diet, or combination of KO phenotype and IF diet. **c** AL-fed testing of oldest-old Ames Dwarf

male mice after longer-term IF (with statistical analysis table) displaying no blood glucose-lowering effect of either Df phenotype, IF diet, or combination of the two factors. **d** Fasted assessment of oldest-old Ames Dwarf male mice after longer-term IF (with statistical analysis table) demonstrating no blood glucose lowering effect of either Df phenotype, IF diet, or combination of the two. All measures of central tendency are arithmetic means, and all depictions of variation (*error bars*) represent standard deviations (*SD*)





#### Fig. 5 (continued)



10 min. 20 min. 30 min. 40 min. 50 min. 60 min. 75 min. 90 min. 120 min. Comp 0 min. N on A.L. vs. KO on A.L 0.9114 0.6542 0.4045 0.1872 0.1158 0.0551 0.0441 0.0474 0.0762 N on A.L. vs. N on I.F. 0.5497 0.4194 0.3713 0.1722 0.1027 0.0683 0.0354 0.0175 0.0065 N on A.L. vs. KO on I.F. 0.4548 0.3152 0.2411 0.0864 0.0223 0.0091 0.0035 0.001 0.0439 KO on A.L. vs. KO on I.F 0.469 0.5057 0.6388 0.5301 0.4349 0.3921 0.2191 0.1004 0.0258

Fig. 6 Longer-term IF sustained improved kinetics of insulin mediated blood glucose clearance and gluconeogenesis in Old GHR-KO females, but largely desensitized oldest-old Ames Dwarf males to insulin's effects on blood glucose. a The 1.0 USPU insulin tolerance test (normalized values, with statistical analysis table) showing a combined (sensitizing) effect of both KO phenotype and IF diet on old N female littermates. b The 0.3 USPU insulin tolerance test (normalized values, with statistical analysis table) showing sensitizing effect of KO phenotype, sensitizing effects of IF diet on both old female N controls and old female KO mutants, and sensitizing benefit of both KO phenotype and IF diet on old female N littermates. c The 0.1 USPU insulin tolerance test (normalized values, with statistical analysis table) showing sensitizing effect of KO phenotype, sensitizing effects of IF diet on both old female N mice and old female KO mutants, and sensitization benefit of both KO phenotype and IF diet on old N females. d The 1.0 USPU insulin tolerance test (normalized values, with statistical analysis table) showing desensitizing effect of Df phenotype, de-sensitizing effect of IF diet on oldest-old N males, yet sensitizing effect of IF on oldest-old Df male mice. e The 0.3 USPU insulin tolerance test (normalized values, with statistical analysis table) showing de-sensitizing effects of IF on both oldestold N male mice and oldest-old male Df mutants, as well as desensitizing effect of a combination of both factors on oldestold N littermate control males. f The 0.1 USPU insulin tolerance test (normalized values, with statistical analysis table) showing desensitizing effect of Df phenotype and de-sensitizing effect of IF on oldest-old N littermate males. g Pyruvate conversion test (normalized values, with statistical analysis table) showing promoting effect of Ghr/bp gene disruption and repressive effect of IF diet for female GHR-KO mice. h Pyruvate conversion test (normalized values, with statistical analysis table) showing no effect of either Df phenotype or IF on oldest-old males of either phenotype. All measures of central tendency are arithmetic means, and all depictions of variation (error bars) represent standard deviations (SD) (see also Figs. S29-S40)





#### Fig. 6 (continued)





#### Fig. 6 (continued)

## 🖄 Springer





Fig. 6 (continued)









Fig. 7 Differential effects of phenotype or diet on AL-fed or fasted blood glucose concentrations at old (for GHR-KO mice) or oldestold (forAmes Dwarfs) age range. **a** AL-fed testing of old GHR-KO female mice after longer-term IF (with statistical analysis table) showing blood glucose-lowering effect of a combination of KO phenotype and IF diet for old KO littermate control females. **b** Fasted assessment of old GHR-KO females after longer-term IF (with statistical analysis table) exhibiting no blood-glucose lowering effect of either KO phenotype, IF diet, or combination of KO phenotype and IF diet. **c** AL-fed testing of oldest-old Ames Dwarf male mice after longer-term IF (with statistical analysis table) displaying no blood glucose-lowering effect of either Df phenotype, IF diet, or combination of the two factors. **d** Fasted assessment of oldest-old Ames Dwarf male mice after longer-term IF (with statistical analysis table) demonstrating no blood glucoselowering effect of either Df phenotype, IF diet, or combination of the two. All measures of central tendency are arithmetic means, and all depictions of variation (*error bars*) represent standard deviations (*SD*)